**WHAT IS CLAIMED IS:**

1. An implant for inducing the formation of bone and cartilage within a body, said implant consisting essentially of organic bone matrix having discrete predetermined perforations populated with live human undifferentiated cells suspended in a gel; said populated perforations, after implantation within said body, being capable of stimulating the transformation of said cells into differentiated cartilage and bone cells.

2. The implant of claim 1, wherein said gel is a bone gel comprising demineralized bone matrix and water.

3. The implant of claim 1, wherein said gel is a bone gel comprising demineralized bone matrix and human blood serum or any component thereof.

4. The implant of claim 1, wherein said live undifferentiated cells are derived from blood.

5. The implant of claim 1, wherein said live undifferentiated cells are derived from bone marrow.

6. The implant of claim 1, wherein said live undifferentiated cells are derived from a spleen.

7. The implant of claim 1, wherein said live undifferentiated cells are derived from adipose tissue.

8. The implant of claim 1, wherein said live undifferentiated cells are derived from a placenta.

9. The implant of claim 1, wherein said live undifferentiated cells are derived from an umbilical cord.

10. The implant of claim 1, wherein said live undifferentiated cells are derived from an embryo.

11. A method of preparing the implant of claim 1, said method comprising:
    (a) preparing a gel suitable for suspending live human undifferentiated cells, said gel being non-toxic to humans upon implantation;
    (b) mixing live human undifferentiated cells with said gel to prepare a suspension of said cells;
    (c) preparing an organic bone matrix having discrete predetermined perforations; and
    (d) causing said perforations within said organic bone matrix to be populated with said live human undifferentiated cells suspended in said gel.

12. The method of claim 11, wherein the gel is a bone gel prepared by:
    (a) contacting demineralized bone matrix with water at an elevated temperature sufficient to aid in the dissolution of the bone matrix, and optionally at an elevated pressure to aid in the dissolution of the bone matrix, for a period of time sufficient to provide a supernatant having a near gel-like viscosity; and
    (b) cooling the resulting supernatant to about room temperature.

13. The method of claim 12, wherein said demineralized bone matrix is in the form of a bone powder having an average particle size of about 10 microns to about 850 microns.

14. The method of claim 12, wherein said demineralized bone matrix is in the form of a bone powder having an average particle size of about 45 microns to about 125 microns.

15. The method of claim 12, wherein said demineralized bone matrix is contacted:
    (i) with water at a temperature above about 25 degrees Centigrade with agitation; or
    (ii) with water at a temperature above about 25 degrees Centigrade and at a pressure above about 15 psi.

16. The method of claim12, wherein said demineralized bone matrix is contacted with water at an average temperature between about 85 and about 100

degrees Centigrade, for a period of time between about 24 and about 120 hours.

17. The method of claim 15, wherein the demineralized bone matrix is contacted with water at an average temperature between about 105 and about 200 degrees Centigrade, and at a pressure between about 15 to about 90 psi, for about 1 to about 8 hours.

18. The method of claim 17, wherein:
(a) the demineralized bone matrix is in the form of a bone powder with an average particle size between 45-124 microns; and
(b) the demineralized bone matrix is contacted with water at an average temperature between about 110-115 degrees Centigrade, and at a average pressure between 20 psi and 22 psi, for about 3 hours.

19. The method of claim 11, wherein the gel is a bone gel prepared by:

(a) dissolving demineralized bone matrix in:

(i) a solution comprising water and human blood serum or any component thereof at a temperature of above about 25 degrees Centigrade with agitation; or

(ii) a solution comprising water and human blood serum or any component thereof at a temperature of at least about 25 degrees Centigrade and a pressure of at least about 15 psi;

for a period of time sufficient to provide a supernatant having a near gel-like viscosity; and

(b) cooling the resulting supernatant to about room temperature.

20. The method of claim 19, wherein said demineralized bone matrix is in the form of a bone powder having an average particle size of about 10 microns to about 850 microns.

21. The method of claim 19, wherein said demineralized bone matrix is in the form of a bone powder having an average particle size of about 45 microns to about 125 microns.

22. The method of claim 19, wherein said demineralized bone matrix is contacted with said solution at an average temperature between about 85 and about 100 degrees Centigrade, for a period of time between about 24 and about 120 hours.

23. The method of claim 19, wherein said demineralized bone matrix is contacted with said solution at an average temperature between about 105 and about 200 degrees Centigrade, and at a pressure between about 15 to about 90 psi, for about 1 to about 8 hours.

24. The method of claim 11, wherein said live undifferentiated cells are derived from blood.

25. The method of claim 11, wherein said live undifferentiated cells are derived from bone marrow.

26. The method of claim 11, wherein said live undifferentiated cells are derived from a spleen.

27. The method of claim 11, wherein said live undifferentiated cells are derived from adipose tissue.

28. The method of claim 11, wherein said live undifferentiated cells are derived from a placenta.

29. The method of claim 11, wherein said live undifferentiated cells are derived from an umbilical cord.

30. The method of claim 11, wherein said live undifferentiated cells are derived from an embryo.

31. The method of claim 11, wherein step (d) is achieved by:

a. submerging said organic bone matrix having discrete predetermined perforations into said suspension of live human undifferentiated cells, and centrifuging said submerged organic bone matrix for a period of time sufficient to cause said perforations within said organic bone matrix to be populated with said live human undifferentiated cells suspended in said gel.

32. A method for inducing the formation of bone and cartilage within a body comprising implanting within said body a matrix material comprising organic bone matrix having discrete predetermined perforations populated with live human undifferentiated cells suspended in a non-toxic gel, said matrix, after implantation within said body, being capable of stimulating the transformation of said cells into differentiated cartilage and bone cells.